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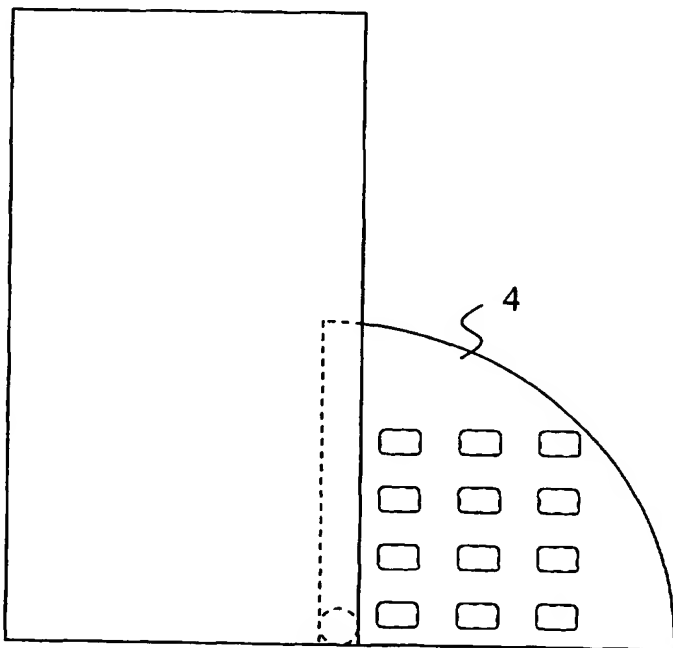
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Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for all designations
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for all designations
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for all designations

[Continued on next page]

(54) Title: **EXTRACTABLE TERMINAL KEYPAD**



(57) **Abstract:** Terminal (1), comprising a terminal body (2), a data output interface including a display (6) disposed on a face of said terminal body, and a data input interface including a keypad (4), wherein said keypad is extractable from a storage space (8) inside said terminal body. Said terminal body has a front face supporting said display, and a back face opposite said front face, wherein said keypad is extractable from an aperture (7) disposed at a side of said terminal between said front face and said back face.



— of inventorship (Rule 4.17(iv)) for US only

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

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INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP2004/002370

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 G06F1/16 H04M1/02 G06F3/02

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G06F H04M

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, IBM-TDB

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE 195 46 786 A (SCHMITZ HORST ;ENGLERT RAINER (DE)) 19 June 1997 (1997-06-19) column 6, line 10 - line 36; figures 5,8 -----	1-3
X	WO 00/54479 A (RENER ROBERT O) 14 September 2000 (2000-09-14) abstract page 4, line 15 - page 6, line 30; figures 1A-1C	1-3,8,15
A	-----	10,12
X	US 2001/003450 A1 (HIETAMAKI JOUNI J ET AL) 14 June 2001 (2001-06-14) abstract page 2, paragraph 49 - page 3; figures 3,4 ----- -/--	1,3,8,15

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

12 July 2004

Date of mailing of the international search report

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INTERNATIONAL SEARCH REPORT

International Application No
PCT/EP2004/002370

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 01/35202 A (PARK HYUCK SANG) 17 May 2001 (2001-05-17) page 9, line 6 - page 11, line 18; figures 1,2,5-7 -----	13
A	DE 295 12 756 U (GOECKEL KARL) 12 October 1995 (1995-10-12) page 9, line 24 - page 10, line 24; figure 6 -----	14

INTERNATIONAL SEARCH REPORT

International application No.
PCT/EP2004/002370

Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-3, 8-15

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-3,8-15

Terminal comprising a terminal body, a display and a keypad which is extractable in a linear fashion from a storage space inside said terminal body, wherein said keypad is disposed on a flexible film comprising a material which changes from a flexible to a stiff mode upon application of an electrical current from an activator means in the terminal body.

2. claims: 1,4-7

Terminal comprising a terminal body, a display and a keypad which is extractable in a rotational fashion from a storage space inside said terminal body by a rotational movement, wherein said keypad is rotatably connected to said terminal body via a lever.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP2004/002370

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
DE 19546786	A	19-06-1997	DE 19546786 A1	19-06-1997
WO 0054479	A	14-09-2000	AU 2791800 A	28-09-2000
			WO 0054479 A2	14-09-2000
			EP 1161824 A2	12-12-2001
US 2001003450	A1	14-06-2001	FI 992636 A	09-06-2001
			AT 243332 T	15-07-2003
			AU 1527201 A	18-06-2001
			DE 60003463 D1	24-07-2003
			DE 60003463 T2	06-05-2004
			EP 1238325 A1	11-09-2002
			WO 0142891 A1	14-06-2001
WO 0135202	A	17-05-2001	KR 178980 Y1	15-04-2000
			AU 1558001 A	06-06-2001
			WO 0135202 A1	17-05-2001
DE 29512756	U	12-10-1995	DE 29512756 U1	12-10-1995